

Date:

Citizens Qualitative Habitat Evaluation Index

Vol ID: Site ID: River and Watershed:

CQHEI Total

I. Substrate (Bottom Type)

Score:

a) Size

☐ Mostly Large
(Fist Size or Bigger)
14 pt

☐ Mostly Small (Smaller
Than Fingernail, but Still
Coarse, or Bedrock)
6 pt

☐ Mostly Medium
(Smaller than Fist, but
Bigger than Fingernail)
10 pt

☐ Mostly Very Fine (Not
Coarse, Sometimes
Greasy or Mucky)
0 pt

b) "Smothering"

☐ Are Fist Size and Larger
Pieces Smothered By
Sands/Silts?
NO
5 pt

☐ YES
0 pt

Symptoms: Hard to Move
Large Pieces, Often
Black on Bottom with Few
Insects

c) "Silting"

☐ Are Silts and Clays
Distributed Throughout
Stream?
NO
5 pt

☐ YES
0 pt

Symptoms: Light Kicking
of Bottom Results in
Substantial Clouding of
Stream for More than a
Minute or Two

II. Fish Cover (Hiding Places) - Add 2 Points For Each One Present

Score:

☐ Underwater Tree
Roots (Large)
2 pt

☐ Boulders
2 pt

☐ Downed Trees,
Logs, Branches
2 pt

☐ Water Plants
2 pt

☐ Undercut Banks
2 pt

☐ Underwater Tree
Rootlets (Fine)
2 pt

☐ Backwaters,
Oxbows or Side
Channels
2 pt

☐ Shallow, Slow
Areas for
Small Fish
2 pt

☐ Deep Areas
(Chest Deep)
2 pt

☐ Shrubs, Small Trees
that Hang Close
Over the Bank
2 pt

III. Stream Shape and Human Alterations

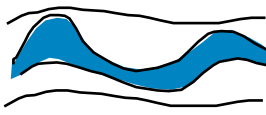
Score:

a) "Curviness" or "Sinuosity" of Channel

☐ 2 or More
Good Bends
8 pt




☐ 1 or 2
Good Bends
6 pt



☐ Mostly Straight
Some "Wiggle"
3 pt



☐ Very Straight
0 pt



b) How Natural Is The Site?

☐ Mostly Natural
12 pt

☐ Many Man-made
Changes, but still some
natural conditions left
(e.g., trees, meanders)
6 pt

☐ A Few Minor
Man-made Changes
(e.g., a bridge, some
streambank changes)
9 pt

☐ Heavy, Man-made
Changes (e.g., leveed
or channelized)
0 pt

IV. Stream Forests & Wetlands (Riparian Area) & Erosion

Score:

a) Width of Riparian Forest & Wetland - Mostly:

☐ Wide (Can't Throw
A Rock Through/
Across It)
8 pt

☐ Narrow (Can Throw
A Rock Through/
Across It)
5 pt

☐ None
0 pt

b) Land Use - Mostly:

☐ Forest/Wetland
5 pt

☐ Shrubs
4 pt

☐ Overgrown
Fields
3 pt

☐ Fenced Pasture
2 pt

☐ Park (Grass)
2 pt

☐ Conservation
Tillage
2 pt

☐ Suburban
1 pt

☐ Row Crop
1 pt

☐ Open Pasture
0 pt

☐ Urban/
Industrial
0 pt

c) Bank Erosion - Typically:

☐ Stable Hard or Well-
Vegetated Banks
4 pt

☐ Combination of Stable
and Eroding Banks
2 pt

☐ Raw, Collapsing
Banks
0 pt

d) How Much of Stream is Shaded?

☐ Mostly
3 pt

☐ Partly
2 pt

☐ None
0 pt

V. Depth & Velocity

Score:

a) Deepest Pool is At Least:

☐ Chest Deep
8 pt

☐ Knee Deep
4 pt

☐ Waist Deep
6 pt

☐ Ankle Deep
0 pt

b) Check ALL The Flow Types That You See (Add Points):

☐ Very Fast: Hard to
Stand in the Current
2 pt

☐ Fast: Quickly Takes
Objects Downstream
3 pt

☐ Moderate: Slowly Takes
Objects Downstream
1 pt

☐ Slow: Flow
Nearly Absent
1 pt

☐ None
0 pt

VI. Riffles/Runs (Areas Where Current is Fast/Turbulent, Surface May Be Broken)

Score:

a) Riffles/Runs Are:

☐ Knee Deep or
Deeper & Fast
8 pt

☐ Ankle Deep or
Less & Slow
4 pt

☐ Ankle/Calf
Deep & Fast
6 pt

☐ Do Not Exist
0 pt

b) Riffle/Run Substrates Are:

☐ Fist Size or Larger
7 pt

☐ Smaller Than Fist Size,
but Larger Than
Fingernail
6 pt

☐ Smaller Than Your
Fingernails or Do Not Exist
0 pt

Hoosier Riverwatch Stream Flow Calculation Worksheet

1. River Width (W)

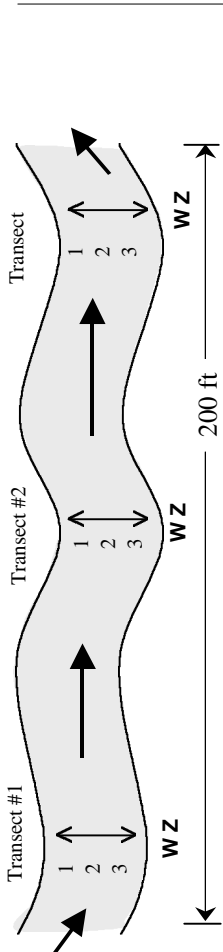
(One measurement at each transect.)

Transect #	Width (ft)
(1)	
(2)	
(3)	
Average Width (W)	

2. River Depth (Z)

(Three measurements along each transect.)

Transect 1 (ft)	Transect 2 (ft)	Transect 3 (ft)
Average Depth (Z)		



3. Surface Velocity(V) = Length/Time

(Allow the object to attain velocity before timing it.)

Length (ft)	Time (sec)	Velocity ft/sec
(1)		
(2)		
(3)		
Average Velocity (V)		

Unit Conversions
1 in = 0.0833 ft
1 m = 3.281 ft

4. Stream Flow = Discharge (D)

Avg. Width (W)	feet
Avg. Depth (Z)	feet
Avg. Velocity (V)	feet/sec
*(n) = 0.9 or 0.8	none
Discharge (D)	ft ³ /s = (cfs)

Multiply W x Z x V x n = D

*n is a constant indicating roughness of substrate - use 0.9 for sandy, muddy bottom or bedrock; use 0.8 for gravel or rocky bottom

Convert measurements of feet + inches to 10ths of feet. **Example: 10 ft + 4 in = 10.33 ft.** (Multiply 4 inches x 0.0833 feet/inch = 0.3332 ft. Add this to 10 feet = 10.33 feet.)

Date

Chemical Monitoring Work Sheet

Time

Stream Name
and Site ID

Air Temp °C

Water Temp °C

Lat °N

Long °W

Current Weather ☐ Clear/Sunny ☐ Overcast ☐ Showers ☐ Rain (Steady) ☐ Storm (Heavy)

Worst Weather in Past 48 hrs ☐ Clear/Sunny ☐ Overcast ☐ Showers ☐ Rain (Steady) ☐ Storm (Heavy)

	Units	Sample 1	Sample 2	Sample 3	Average
Dissolved Oxygen (DO)	% Saturation				
	mg/L				
Avg DO (original)	mg/L				
— DO after 5 days					
BOD 5-day (difference)					
E. Coli Bacteria (purple/blue-violet colonies)	colonies/ 100 mL				
General Coliforms (pink/magenta colonies)	colonies/ 100 mL				
pH	units				
Temp at Your Site — Upstream (1 mi) Temp	°C				
Temperature Change					
Orthophosphate	mg/L				
Total Phosphate (add acid and boil for 30 min)	mg/L				
Nitrate (NO ₃) (after multiply by 4.4)	mg/L				
Nitrite (NO ₂) (after multiply by 3.3)	mg/L				
Transparency (from Tube)	cm				
Turbidity (from chart – use in database entry)	NTU				
Ammonia Nitrogen	mg/L				
Other _____					
Other _____					
Other _____					
Other _____					

CHEMICAL MONITORING DATA SHEET (WQI)

BIOLOGICAL MONITORING DATA SHEET

(Above ID numbers are required.)